

REMARKS

The applicant appreciates the Examiner's thorough examination of the application and requests reexamination and reconsideration of the preceding amendments and the following remarks.

The Examiner rejects claims 1-10 under 35 U.S.C. §112, 2nd paragraph as being indefinite. Particularly referring to claims 1, 7 and 8, the Examiner states that the phrase "the components" in claim 1 lacks proper antecedent basis because the claim earlier does not refer to plural components; that the phrase "the components handler" in claim 8 because claim 1 recites "the component handler"; and that the phrase "partial cooling" should be changed to "partial coating" in claim 7.

The applicant has amended claims 1, 7 and 8 to more clearly define the invention. Accordingly, the applicant requests that the Examiner withdraw the rejections under 35 U.S.C. §112.

The applicant acknowledges and appreciates the Examiner's indication that dependent claim 5 would be allowable if rewritten or amended to overcome the rejections under 35 U.S.C. 112, 2nd paragraph. New independent claim 13 includes the elements of claim 1 (amended to more clearly define the invention as discussed above) and the elements of objected to claim 5. Accordingly, new independent claim 13 is in condition for allowance. Also, new claim 14 includes the elements of claim 1, objected to claim 5, as well as the elements of the intervening claim 4. Accordingly, new claim 14 is also in condition for allowance.

The Examiner also rejects claims 1-3, 6 and 7 under 35 U.S.C. §102(b) being anticipated by, or in the alternative under 35 U.S.C. §103(a) as obvious over, U.S. Pat.

No. 5,741,405 to *Statnikov*.

The structure and function disclosed and taught by *Statnikov*, however, is diametrically opposite the applicant's claimed invention.

Statnikov teaches a sputter-depositing method and system which includes "plating stations" 21-26 in plating compartment 7. In this connection, the Examiner states that "it is noted that each PVD station is also a cooling station".

However, *Statnikov* does not teach PVD stations or cooling stations. Instead, *Statnikov* teaches that each plating station includes a cooling/heat sink unit and a sputtering device. This is not a matter of semantics, but rather points to the fundamental structural and functional difference between the applicant's invention and the teachings of *Statnikov*, as discussed below.

First, *Statnikov* does not teach a physical vapor deposition station, and a cooling station (i.e. a separate element) at all. As taught by *Statnikov*, the cooling/heat sink units 31-33 and 34-36 that are within the plating stations 21-23 and 24-26 are located across from their respective sputtering devices 27, 28 and 29, also within the plating stations. See e.g. Fig. 2 of *Statnikov*.¹ The substrates 5 are passed from plating station to plating station, passing between the cooling/heat sinks and the sputtering devices within each plating station. See e.g. Fig. 2 and column 2, lines 44-60.

Moreover, the sputter-deposit apparatus including the conveyor taught by *Statnikov* is not structured to impart movement of the substrate proximate the physical vapor deposition station, then proximate a cooling station, and to switch between the vapor deposition station and the cooling station. As taught by *Statnikov*, at each plating

¹ Cooling/heat sink units 37-39 are not within plating stations and do not involve sputter-deposition at all.

station the substrates are clamped to a cooling/heat sink unit. See e.g. column 4, lines 43-49. By way of illustration, *Statnikov* teaches that the substrate is advanced into contact with, and clamped to, the first cooling unit 31 in first plating/sputter-deposit section 21, and cooled while the corresponding sputtering device 27 across from it is energized. Two partial (sputtering) depositions are made, with non-deposit intervals of time between each deposition. During all of this time the substrate remains clamped to cooling/heat sink unit 31 in plating section 21. Thereafter the substrate is advanced to the next plating section 22 and clamped to the next cooling unit 32, and the process continues. See e.g. column 5, lines 3-17.

In summary, *Statnikov* teaches that each plating station 21-26 includes both a cooling/heat sink unit and a sputtering device, and does not teach or suggest separate physical vapor deposition station and cooling station elements. *Statnikov* teaches that the substrate is clamped to the cooling/heat sink unit at all times during cooling and deposition, and does not teach or suggest a structure to move the substrate proximate the physical vapor deposition station, then proximate the cooling station, and to switch between the physical vapor deposition station and the cooling station.

Thus, the teachings of *Statnikov* are in sharp contrast to the applicant's claim 1 which recites, *inter alia*, at least one physical vapor deposition station, at least one cooling station, and a component handler to move the at least one substrate to be coated from one station to the other and to switch between stations until the desired coating thickness is obtained.

In order to find invalidity based on anticipation, not only must all of the elements of all the claims be found within a single prior art reference, but "[t]here must be no

difference between the claimed invention and the reference disclosure, as viewed by a person of ordinary skill in the art.” See e.g. Scripps Clinic v. Genentech, Inc., 927 F.2d 1565, 18 USPQ 2d 1001, 1010 (Fed. Cir. 1991).

A person of ordinary skill in the art would clearly view a difference between plating stations that include sputtering devices and cooling units, as disclosed and taught by *Statnikov*, from the vapor deposition stations and cooling stations claimed by the applicant. A person of ordinary skill in the art would also view a difference between a element that moves a substrate into place to be clamped to a cooling unit throughout vapor deposition and cooling, as taught by *Statnikov*, and an element configured to move a substrate proximate a physical vapor deposition station, then proximate a cooling station, and to then switch between physical vapor deposition station and the cooling station until the substrate is coated as desired, as claimed by the applicant.

Also, anticipation requires the presence in a single prior art reference disclosure of each and every element of the claimed invention, arranged as in the claim. See e.g. Lindemann Maschinenfabrik GMBH v. American Hoist & Derrick, 730 F.2d 1452, 221 USPQ 481,485 (Fed. Cir. 1984). As discussed above, *Statnikov* clearly does not disclose each and every element of the applicant’s claimed invention, arranged as in the applicant’s claim.

Moreover, by teaching that the substrate is clamped throughout deposition and heating, and that the physical vapor sputtering device and the cooling units are in the same plating station, *Statnikov* teaches away from the applicant’s invention.

Thus, *Statnikov* does not disclose, teach or suggest applicant’s independent claim

1. Accordingly, claim 1 is in condition for allowance. Claims 2, 3, 6 and 7 depend

directly or indirectly from claim 1, and thus are in condition for allowance for at least the foregoing reasons.

Additionally, claim 2 as amended recites the system of claim 1 in which there a plurality of physical vapor deposition stations and cooling stations with cooling stations positioned between physical vapor deposition stations. While it is not proper to refer to the sputtering devices 27-29 taught by *Statnikov* as “physical vapor deposition stations” and the cooling/heat sink units, i.e. 31-33, as “cooling stations” (as discussed above), it is nonetheless clear that *Statnikov* teaches that the cooling/heat sink devices are immediately adjacent one another. In contrast to the applicant’s claimed invention, *Statnikov* does not teach that the cooling/heat sink units are positioned between the sputtering devices. Accordingly, claim 2 is allowable for this additional reason.

The Examiner also rejects claim 4 under 35 U.S.C. §103(a) as being unpatentable over *Statnikov* in view of U.S. Pat. No. 5,181,556 to *Hughes*. The Examiner further rejects claims 8 and 9 under 35 U.S.C. §103(a) as being unpatentable over *Statnikov* in view of U.S. Pat. No. 4,849,250 to *Dee* and U.S. Pat. No. 5,026,470 to *Bonyhard*, and over *Statnikov* in view of U.S. Pat. No. 5,538,610 to *Gesche* and U.S. Pat. No. 4,894,133 to *Hedgeoth*. Additionally, the Examiner also rejects claim 10 under 35 U.S.C. §103(a) as being unpatentable over *Statnikov* in view of *Gesche* and *Hedgeoth* and taken in further view of *Hughes*.

Claims 4, 8, 9 and 10 depend directly or indirectly from independent claim 1, and thus are in condition for allowance for at least the foregoing reasons with respect to claim 1.

New claim 11 depends from claim 2 as amended, and thus is allowable for at least

the foregoing reasons discussed with respect to claims 1 and 2. New claim 12 depends from claim 1, and thus is in condition for allowance for at least the reasons above relating to claim 1.

New claim 15 is for a system for applying a coating to a plurality of insulative substrates, and recites the same or highly similar elements as the elements of claim 1 and claim 2 (as amended). For at least the reasons above relating to those claims, claim 15 is also in condition for allowance.

CONCLUSION

Each of the Examiner's rejections has been addressed or traversed. Accordingly, it is respectfully submitted that claims 1-15 are in condition for allowance. Early and favorable action is respectfully requested.

If for any reason this Response is found to be incomplete, or if at any time it appears that a telephone conference with counsel would help advance prosecution, please telephone the undersigned or his associates, collect in Waltham, Massachusetts at (781) 890-5678.

Respectfully submitted,

A handwritten signature in black ink, appearing to read "T. Thompson, Jr.", written over a horizontal line.

Thomas E. Thompson, Jr.
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